

Patent
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The system monitoring and management aspect of an embodiment of the present invention makes use of an agent set that provides a communication mechanism such that the bank can talk to its ATMs and can query them for their status. Use is also made of the concept of instrumentation in which software that is essentially resident on the ATMs monitors the hardware devices that are part of the ATM, and when those hardware devices report a problem, the software is alerted. Further, an embodiment of the present invention includes the concept of instruments which are addressable entities that can be queried about the status of any particular item on the ATM.

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It should be recognized that the system and method disclosed are merely illustrative of the principles of the present invention. Numerous modifications and adaptations thereof will be readily apparent to those skilled in the art without departing from the spirit and scope of the present invention. Accordingly, the invention is only limited by the following claims.

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WHAT IS CLAIMED IS:

1. A method for managing a financial services delivery system component, comprising:
receiving a management request from an external system management component
relative to a managed component;
translating the management request into a specific command relative to the managed
component;
executing the command via an interface published by the managed component; and
providing a response to the management request.

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2. The method of claim 1, wherein receiving the management request further comprises
receiving the request by a management protocol agent.

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3. The method of claim 1, wherein receiving the management request further comprises
receiving the request via an external interface.

4. The method of claim 1, wherein translating the management request further comprises
translating the request by a management protocol agent.

5. The method of claim 1, wherein translating the management request further comprises
translating the request from a remote system management protocol into the specific
command.

6. The method of claim 5, wherein translating the management request further comprises
translating the request into at least one of an inquiry command, a stop command, and a start
command.

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7. The method of claim 5, wherein translating the management request further comprises
translating the request into the specific command for a command dispatch agent.

8. The method of claim 7, wherein translating the management request further comprises
sending the translated command to the command dispatch agent.

9. The method of claim 1, wherein executing the command further comprises obtaining
the managed component from a component registry.

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10. The method of claim 9, wherein executing the command further comprises obtaining
the managed component from the component registry by a command dispatch agent.

11. The method of claim 9, wherein executing the command further comprises registering
the managed component with the component registry.

12. The method of claim 1, wherein executing the command further comprises dispatching the command to the managed component.

13. The method of claim 12, wherein dispatching the command further comprises dispatching the command to the managed component by a command dispatch agent.

5 14. The method of claim 13, wherein dispatching the command by the command dispatch agent further comprises sending an inquire command to the managed component.

15. The method of claim 13, wherein dispatching the command by the command dispatch agent further comprises sending one of a stop command and a start command to the managed component.

10 16. The method of claim 1, wherein executing the command further comprises collecting at least one instrument owned by the managed component.

17. The method of claim 1, wherein executing the command further comprises inquiring about a value of at least one instrument owned by the managed component.

15 18. The method of claim 1, wherein executing the command further comprises obtaining a status of at least one instrument owned by the managed component.

19. The method of claim 1, wherein providing the response further comprises providing the response to the external system management component.

20. The method of claim 19, wherein providing the response further comprises providing the status of at least one instrument owned by the managed component to the external system management component.

20 21. The method of claim 19, wherein providing the response further comprises providing an acknowledgment of one of a stop command and a start command for the managed component to the external system management agent.

22. The method of claim 19, wherein providing the response further comprises providing the response via an external interface.

25 23. The method of claim 22, wherein providing the response further comprises providing the response by a management protocol agent.

24. The method of claim 1, wherein providing the response further comprises translating the response into a remote management system protocol format for an external system management component.

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25. The method of claim 24, wherein providing the response further comprises translating the response by a management protocol agent.

26. A method for managing a financial services delivery system component, comprising:
monitoring at least one managed component in regard to at least one of an instrument
5 variable aspect and an event aspect of the managed component;
generating an alarm relative to the managed component;
translating the alarm into a remote system management protocol format; and
providing the formatted alarm to an external system management component via an
external interface.

10 27. The method of claim 26, wherein monitoring the managed component further
comprises monitoring the managed component by a status monitor agent.

28. The method of claim 27, wherein monitoring the managed component in regard to the
instrument variable aspect further comprises receiving a notification by the status monitor
agent of a change in at least one value of an instrument owned by the managed component.

15 29. The method of claim 28, wherein monitoring the managed component in regard to the
instrument variable aspect further comprises registering by the status monitor agent for
notification of the change.

20 30. The method of claim 28, wherein monitoring the managed component in regard to the
instrument variable aspect further comprises receiving the notification of the change in the
instrument selected from a group of instruments consisting of a counter instrument, a
bounded counter instrument, a status instrument, and a control instrument.

31. The method of claim 26, wherein monitoring the managed component in regard the
event aspect further comprises registering with an event broker by the status monitor agent for
notification of at least one event relative to the managed component.

25 32. The method of claim 26, wherein monitoring the managed component further
comprises periodically polling the managed component by the status monitor agent to
determine if a local action is required.

33. The method of claim 26, wherein monitoring the managed component further
comprises periodically polling the managed component by the status monitor agent to
30 determine if notification of an external system management component is required.

34. The method of claim 26, wherein generating the alarm further comprises generating an event by one of an instrument owned by the managed component and an event broker.

35. The method of claim 34, wherein generating the alarm by the instrument further comprises generating the event by the instrument through the managed component.

5 36. The method of claim 26, wherein generating the alarm further comprises initiating one of a local action and an inquiry regarding the managed component through a command dispatch agent.

10 37. The method of claim 36, wherein generating the alarm further comprises initiating one of the local action and the inquiry by a rule based state machine maintained by a status monitoring agent.

38. The method of claim 26, wherein generating the alarm further comprises sending an unsolicited notification of one of an event and a change in an instrument owned by the managed component.

15 39. The method of claim 38, wherein generating the alarm further comprises sending the unsolicited notification via an event notification interface published by a status monitoring agent.

40. The method of claim 26, wherein translating the alarm further comprises translating the alarm by a management protocol agent.

20 41. The method of claim 40, wherein translating the alarm further comprises translating the alarm for the external system management component.

42. The method of claim 41, wherein translating the alarm further comprises translating the alarm into a remote management protocol format.

43. The method of claim 26, wherein providing the alarm further comprises providing the formatted alarm by a management protocol agent.

25 44. A system for managing a financial services delivery system component, comprising:
means for receiving a management request from an external system management component relative to a managed component;

means for translating the management request into a specific command relative to the managed component;

means for executing the command via an interface published by the managed component; and

means for providing a response to the management request.

45. The system of claim 44, wherein the means for receiving the management request further comprises means for receiving the request by a management protocol agent.

46. The system of claim 44, wherein the means for receiving the management request further comprises means for receiving the request via an external interface.

47. The system of claim 44, wherein the means for translating the management request further comprises means for translating the request by a management protocol agent.

48. The system of claim 44, wherein the means for translating the management request further comprises means for translating the request from a remote system management protocol into the specific command.

49. The system of claim 48, wherein the means for translating the management request further comprises means for translating the request into at least one of an inquiry command, a stop command, and a start command.

50. The system of claim 48, wherein the means for translating the management request further comprises means for translating the request into the specific command for a command dispatch agent.

51. The system of claim 50, wherein the means for translating the management request further comprises means for sending the translated command to the command dispatch agent.

52. The system of claim 44, wherein the means for executing the command further comprises means for obtaining the managed component from a component registry.

53. The system of claim 52, wherein the means for executing the command further comprises means for obtaining the managed component from the component registry by a command dispatch agent.

54. The system of claim 52, wherein the means for executing the command further comprises means for registering the managed component with the component registry.

55. The system of claim 44, wherein the means for executing the command further comprises means for dispatching the command to the managed component.

56. The system of claim 55, wherein the means for dispatching the command further comprises means for dispatching the command to the managed component by a command dispatch agent.

5 57. The system of claim 56, wherein the means for dispatching the command by the command dispatch agent further comprises means for sending an inquire command to the managed component.

58. The system of claim 56, wherein the means for dispatching the command by the command dispatch agent further comprises means for sending one of a stop command and a start command to the managed component.

10 59. The system of claim 44, wherein the means for executing the command further comprises means for collecting at least one instrument owned by the managed component.

60. The system of claim 44, wherein the means for executing the command further comprises means for inquiring about a value of at least one instrument owned by the managed component.

15 61. The system of claim 44, wherein the means for executing the command further comprises means for obtaining a status of at least one instrument owned by the managed component.

62. The system of claim 44, wherein the means for providing the response further comprises means for providing the response to the external system management component.

20 63. The system of claim 62, wherein the means for providing the response further comprises means for providing the status of at least one instrument owned by the managed component to the external system management component.

25 64. The system of claim 62, wherein the means for providing the response further comprises means for providing an acknowledgment of one of a stop command and a start command for the managed component to the external system management agent.

65. The system of claim 62, wherein the means for providing the response further comprises means for providing the response via an external interface.

66. The system of claim 65, wherein the means for providing the response further comprises means for providing the response by a management protocol agent.

67. The system of claim 44, wherein the means for providing the response further comprises means for translating the response into a remote management system protocol format for an external system management component.

68. The system of claim 67, wherein the means for providing the response further comprises means for translating the response by a management protocol agent.

69. A system for managing a financial services delivery system component, comprising:
means for monitoring at least one managed component in regard to at least one of an instrument variable aspect and an event aspect of the managed component;

means for generating an alarm relative to the managed component;

means for translating the alarm into a remote system management protocol format;

and

means for providing the formatted alarm to an external system management component via an external interface.

70. The system of claim 69, wherein the means for monitoring the managed component further comprises means for monitoring the managed component by a status monitor agent.

71. The system of claim 70, wherein the means for monitoring the managed component in regard to the instrument variable aspect further comprises means for receiving a notification by the status monitor agent of a change in at least one value of an instrument owned by the managed component.

72. The system of claim 71, wherein the means for monitoring the managed component in regard to the instrument variable aspect further comprises means for registering by the status monitor agent for notification of the change.

73. The system of claim 71, wherein the means for monitoring the managed component in regard to the instrument variable aspect further comprises means for receiving the notification of the change in the instrument selected from a group of instruments consisting of a counter instrument, a bounded counter instrument, a status instrument, and a control instrument.

74. The system of claim 69, wherein the means for monitoring the managed component in regard the event aspect further comprises means for registering with an event broker by the status monitor agent for notification of at least one event relative to the managed component.

75. The system of claim 69, wherein the means for monitoring the managed component further comprises means for periodically polling the managed component by the status monitor agent to determine if a local action is required.

5 76. The system of claim 69, wherein the means for monitoring the managed component further comprises means for periodically polling the managed component by the status monitor agent to determine if notification of an external system management component is required.

10 77. The system of claim 69, wherein the means for generating the alarm further comprises means for generating an event by one of an instrument owned by the managed component and an event broker.

0 78. The system of claim 77, wherein the means for generating the alarm by the instrument further comprises means for generating the event by the instrument through the managed component.

7 79. The system of claim 69, wherein the means for generating the alarm further comprises means for initiating one of a local action and an inquiry regarding the managed component through a command dispatch agent.

20 80. The system of claim 79, wherein the means for generating the alarm further comprises means for initiating one of the local action and the inquiry by a rule based state machine maintained by a status monitoring agent.

25 81. The system of claim 69, wherein the means for generating the alarm further comprises means for sending an unsolicited notification of one of an event and a change in an instrument owned by the managed component.

82. The system of claim 81, wherein the means for generating the alarm further comprises means for sending the unsolicited notification via an event notification interface published by a status monitoring agent.

83. The system of claim 69, wherein the means for translating the alarm further comprises means for translating the alarm by a management protocol agent.

84. The system of claim 83, wherein the means for translating the alarm further comprises means for translating the alarm for the external system management component.

Patent
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85. The system of claim 84, wherein the means for translating the alarm further comprises means for translating the alarm into a remote management protocol format.

86. The system of claim 69, wherein the means for providing the alarm further comprises means for providing the formatted alarm by a management protocol agent.